IS-003 Focal Intestinal Perforation in Extremely-low-birth-weight Neonates

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Purpose: In Japan, the mortality of intestinal perforation has been increasing for the last two decades, as the survival rate of extremely-low-birth-weight neonates (ELBW) has been increasing. In our NICU, although the incidence of necrotizing enterocolitis (NEC) has decreased, that of focal intestinal perforation (FIP) has been increasing. To elucidate the pathogenesis of FIP, the histological study was performed.

Materials and Methods: For the last 20 years, eighteen ELBW with FIP, including one case with multiple perforation and impending rupture were treated in our NICU. Enterostomy with partial resection was performed routinely.

Results: Histological studies revealed well developed ganglion cells in all the cases. Although some lymphocytic infiltration and hemorrhage were noticed, apparent neutrophilic infiltration, or necrotic change was not identified in any case. No evidence of microcirculatory impairment was identified. The intestinal musculature discontinued abruptly with thinning in three cases, without thinning in the others. The histology of impending rupture showed an absence of the muscularis with preservation of the remaining components of the bowel wall.

Discussion and Conclusion: From these facts that the punched-out perforation looks like that of Hirschsprung’s disease, FIP exclusively occurs in ELBW and that neither mechanical obstruction nor necrotic change can be identified as the cause of the perforation, the authors presume that the immature bowel movement and congenital muscle defects may involved in the pathogenesis of FIP.